WHAT IS CLAIMED IS:

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1. A demodulator for a mobile phone, which can simultaneously perform operation of improving the demodulation error rate caused by such as noise and external feedback loop operation being correction after detected, and can reduce the current consumption by restraining the increase of the process time at the simultaneous operation with an external correction circuit after detected, and can improve the CN ratio (ratio between carrier power and noise power), comprising:

a received error rate improving means which improves the received error rate by weighting for differences at symbols before and after a symbol to be demodulated at the present time and applying feedback for symbols;

a weighting means for applying weighting for correction values after detected of external another loop;

a deciding the order of priority means for deciding the order of priority for plural correction values; and

an adapting itself to various radio wave environment and the kinds of noise by using said weighting means and said deciding the order of priority means.

2. A demodulator for a mobile phone in accordance with claim 1, further comprising:

a delay circuit and an adder for obtaining detected phase difference at said symbol point to be demodulated at the present time.

3. A demodulator for a mobile phone in accordance with claim 1, further comprising:

delay circuits and adders for obtaining phase differences at symbol points before and after said symbol point to be demodulated at the present time.

4. A demodulator for a mobile phone in accordance with claim 1, further comprising:

operation circuits which obtain received quality being difference between each phase difference among symbols obtained at said delay circuits and said adders and an ideal value.

5. A demodulator for a mobile phone in accordance with claim 4, wherein:

said adders input said received quality obtained at said operation circuits to detected phase value of each of said symbol points before and after said symbol point to be demodulated at the present time by feedback operation.

6. A demodulator for a mobile phone in accordance with claim 1, further comprising:

a dividing circuit which demodulates correctly with using outputs from said adders, in case that said detected phase difference at said symbol point to be demodulated includes difference by not detecting phase correctly.

7. A demodulator for a mobile phone in accordance with claim 1, further comprising:

weighting circuits which make feedback amounts attenuate in order to avoid divergence of operated results in case that said feedback amounts are large when said adders input said differences by said feedback operation.

8. A demodulator for a mobile phone in accordance with claim 1, further comprising:

logic circuits which perform bit expansion at input terminals of

said adders and also perform bit expansion for values to be applied feedback and decrease round off error by omitting designated subordinate bits after all operation is finished and returning the number of bits to the original number.

9. A demodulating method for a mobile phone, which can simultaneously perform operation of improving the demodulation error rate caused by such as noise and external feedback loop operation being correction after detected, and can reduce the current consumption by restraining the increase of the process time at the simultaneous operation with an external correction circuit after detected, and can improve the CN ratio (ratio between carrier power and noise power), comprising the steps of:

improving the received error rate by weighting for differences at symbols before and after a symbol to be demodulated at the present time and applying feedback for said symbols;

applying weighting for correction values after detected of another loop;

deciding the order of priority for plural correction values; and

adapting itself to various radio wave environment and the kinds of noise by using said applying weighting process and said deciding the order of priority process.

10. A demodulating method for a mobile phone in accordance with claim 9, further comprising:

delaying and adding signals for obtaining detected phase difference at said symbol point to be demodulated at the present time.

11. A demodulating method for a mobile phone in accordance with claim 9, further comprising the step of:

delaying and adding signals for obtaining detected phase differences at before and after said symbol point to be demodulated at the present time.

12. A demodulating method for a mobile phone in accordance with claim 9, further comprising the step of:

operating for obtaining received quality being difference between each phase difference among symbols obtained at said delaying and adding signals process and an ideal value.

13. A demodulating method for a mobile phone in accordance with claim 12, wherein:

said adding signals process inputs said received quality obtained at said operation process to detected phase value of each of said symbol points before and after said symbol point to be demodulated at the present time by feedback operation.

14. A demodulating method for a mobile phone in accordance with claim 9, further comprising the step of:

dividing process which demodulates correctly with using outputs from said adding process, in case that said detected phase difference at said symbol point to be demodulated includes differences by not detecting phase correctly.

15. A demodulating method for a mobile phone in accordance with claim 9, further comprising the step of:

weighting process which makes feedback amounts attenuate in order to avoid divergence of operated result in case that said feedback amounts are large when said adding process inputs said difference by said feedback operation.

16. A demodulating method for a mobile phone in accordance with claim 9, further comprising the step of:

logic operating process which perform bit expansion at input terminals of said adding process and also perform bit expansion for values to be applied feedback and decrease round off error by omitting designated subordinate bits after all operation is finished and returning the number of bits to the original number.